

## In the Keeping of Unreason

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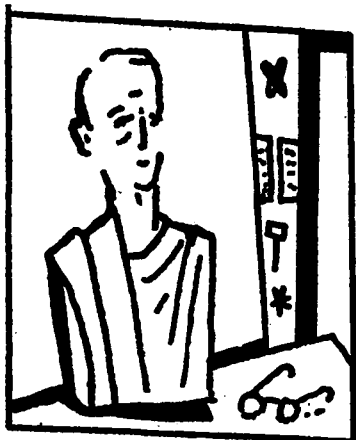
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## J. ROBERT OPPENHEIMER

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# In the Keeping of Unreason

**I**N THESE remarks I shall address myself to one of the questions raised in Raymond Aron's paper:<sup>1</sup>

If, outside the sphere of science, there is nothing but arbitrary decision, has the result of the progress of science and scientific reasoning merely been to place in the keeping of unreason the thing that concerns us most, that is to say, the definition and choice of the essential, of the good life, of the good society?

What I have to say is really intended as an introduction. On the one hand, the problems of political philosophy are, for all the general human weight of this branch of study, highly technical in themselves, and I must leave to the many here who are experts the expert discussion of this field. On the other hand, I will perhaps talk a little more broadly, because my concern is not only with how we can hope to see a revival of political philosophy, but with a rather larger question: how can we hope to see a revival of all philosophy? Aron's question says "the choice of the essential"; that is, after all, what a cultivated skeptic says when he means metaphysics; the choice of "the good life": that is what the cultivated skeptic means when he thinks ethics; and "the good society" is then the subject of political philosophy. I also must admit that nothing that I see in terms of action can in this area have immediate effects. If I were to have the only

<sup>1</sup> The terms of reference of the discussion were contained in a paper by Raymond Aron from which the above quotation was drawn, and which was also presented at the same seminar.

word on this subject, we would not walk out of these doors having solved any problem, or having any right to look forward to any morrow in which all the situations which are now troublesome would suddenly be bright. I do have the impression that we are here dealing with deep and only partially understood and only partially manageable human attitudes, where a small beginning of clarity and common understanding may have great fruits if it is firm and solid enough. The question that I am going to concern myself with is the relations between the scientific explosions of this age and the weight and the excellence that we may hope to achieve in common discourse.

In this, I have in mind an image of common discourse which is itself blurred by three related realities. One is the size of our world and its communities—the number of people involved. One is the generally egalitarian and inclusive view in which there are no *a priori* restrictions on who is to participate in the discourse; clearly, not everyone will; but I think it is of the essence of the Western hope that every one may. The third is the extraordinary rapidity with which the preoccupations and circumstances of our life are altered.

### *A Universal Ideal*

What I am concerned with is an ideal, an image of a part of human life which is inherently not all-inclu-

sive, but which has a quality of being public—I do not mean governmental, but universal—which speaks in terms intelligible to all, of things accessible to all, of meanings relevant to all. I would not, for instance, say that the microbiologists belong to this public sector. They talk of problems which they understand, in which they can communicate without ambiguity, in which they can discover what errors may have been made, and can rejoice, as, believe me, they do rejoice, in all discoveries which add to their insight, irrespective of who, where, and to whose glory the discoveries were made.

I would not regard the modern painter as part of the public sector, and certainly not those advanced and experimental elements of the art of musical composition, where, I have been led to believe, these men, as in the pure mathematician's art, are concerned with a very high purpose—that of preserving the vigor and integrity and life of their own skills—but are not, in the first instance, addressing themselves to man at large. As to our friends the radical composers, I would be gladly corrected by experts; but I will take some correction.

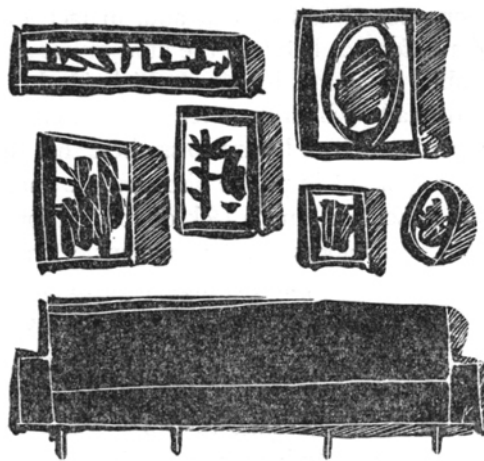
This image of the public sector has suffered from all the circumstances I have mentioned: size, egalitarianism, growth, change; but it has also suffered from a cognitive development, which is the growth of science. I would like to make a few comments on the nature of the relations between rational discourse, culminating in philosophical discourse on the one hand, and the development of science on the other. I am very much guided by my own experience, limited experience, in the United States; and when I talk, I will think of our universities, of our symposia like this one, of our mass culture, of the way in which Americans use their leisure, of what is thought, and written, and done in the country I know best.

### *Dangers and Hopes*

For this provincialism, I make only the following two excuses: it is what I know at first hand; I am very distrustful of the traveller's impressions of other countries. But more important, it seems to me that in the United States we have perhaps come first to the era in which production for consumption's sake has reached a kind of completeness; I am aware that it is not fully complete, but it is from the point of view of men at large nearly so. We are also among the first to face the problem of what does one do with the leisure and the life so returned, what is it for, how does one spend it. I understand that in Europe, where egalitarianism is less strong, where the intellectual tradition and the need for order is more strong, the problems, as they appear in our country, are slightly less advanced and less acute. I suspect, though I would gladly be told that I was wrong by historians or prophets, that the American troubles are forerunners of troubles which will not long remain

out of Europe. I do not believe these troubles are as acute in Communist countries, even in Russia. The technological revolution is not as far along; the land of plenty is not as near; and, in addition, the unifying presence of tyranny has greatly affected, not the nature of intellectual activity in those domains where it is free, but the contours of the regions where intellectual activity as such can be free. Therefore, I believe that in studying the American scene, we may be reminded not how to do things, not what to do all over the world in the same way, but of some of the dangers and some of the hopes which accompany the fulfillment of the basic premises of the industrial and technological revolution.

I need hardly bring to mind that the great sciences of today arose in philosophical discourse and in technical invention. It will be an unending dispute among historians as to the role of these two components, but all of natural science—and I find myself thinking of historical science as continuous with natural science—has its origins in an undifferentiated, unspecialized, common human discourse. The question is, therefore, why the enormous but unanticipated, not fully appreciated, and at the moment not fully realized—perhaps never to be fully realized—success of one sort of intellectual activity should not have had a beneficial effect on the intellectual life of man. In some ways it has, because certain forms of extreme superstition, certain insistent ways of provincialism have found themselves unable to flourish in the presence of the new light of scientific discovery.



But if we think back to the early days, either of the European tradition or of modern society, we see that we were there dealing with relatively few people. The citizenry of Athens, the few handful of men who concerned themselves with the structure of American political power, the participants in the eighteenth-century Enlightenment from Montesquieu up to the Revolution were relatively few men. They had before them a relatively well digested and common language, experience,

and tradition and a common basis of knowledge. It is true that already in the eighteenth century, physics, astronomy, and mathematics were beginning to assume these specialized and abstract and unfamiliar aspects which have increasingly characterized these subjects up to the present day. But they were not beyond the reach of laymen. They were perhaps greeted by laymen with an enthusiasm which a fuller knowledge would not have supported, but they were part of the converse of the eighteenth century.

### *A New Situation*

If we look today, we see a very different situation, an alienation between the world of science and the world of public discourse, which has emasculated, impoverished, and intimidated the world of public discourse without any countervailing advantage, except to the specialized sciences, and which in a strange sense, to use a word which political scientists have taught me, has denied to public discourse an element of legitimacy and has given it a kind of arbitrary, unrooted, unfounded quality. Thus any man may say what he thinks, but there is no way of arriving at a clarification or a consensus. In the past, common discourse and its queen, philosophy, rested on an essentially common basis of knowledge; that is, the men who participated knew, by and large, the same things, and could talk of them with a reasonable limitation in the ambiguity of what they were saying. There was a relatively stable and a deeply shared tradition, an historic experience which was common among the participants in the conversation, and a recognition—not always explicit and, in fact, often denied—of a difference between the kind of use and value which public discourse has as its high ideal, and the kind of criteria by which the sciences themselves in part must judge themselves. I want to say here that the traits which are important in public discourse are enormously important in science; and a lack of recognition of this has created great blocks, great repugnancies on the part of humane, cultivated, and earnest men in their appreciation of the natural sciences and of even the abstract sciences.

I speak of a recognition that there are things important to discuss and analyze, to explore, to subject to some logical surgery, to have in order, in a certain sense: things which are not best viewed as propositional truth, which are not assertions, verifiable by the characteristic methods of science, as to the existence in the world of this or that connection between one thing and another. They have rather a normative and thematic quality. Such, indeed, is the intention of this discussion. They assert the connectedness of things, the relatedness of things, the priority of things; and without them there would be no science; without them there could be no

order in human life. But they do not say that the value of a certain constant—measuring the elementary electric charge in rational units—is 137.037, and challenge you to see what is the next decimal point. They permit no analogous verification.

### *Speaking the Truth*

The logical positivists, who have been so much damned, have recognized the special circumstances in the natural sciences which, in an enormous renunciation of meaning and limitation of scope, have permitted a special definition of truth, and they pre-empt the word truth for that. I do not mind that. I do not insist that the poet speaks the truth; he speaks something equally important. He may, but very seldom, speak the truth: he speaks meanings, and he speaks order. Thematic, as opposed to propositional, discourse is the typical function of the public sector of our lives, which is where law arises, morality, and the highest forms of art. It is not best construed, though it can occasionally be construed, as assertions of fact about the natural order or the human order. It is best construed as assertions of experience, of dedication, of commitment.

We all know how great is the gulf between the intellectual world of the scientist, and the intellectual world, hardly existing today, of public discourse on fundamental human problems. One of the reasons is that the scientific life of man which, in my opinion, constitutes an unparalleled example of our power and our virtuosity and our dedication, has grown both quantitatively and qualitatively in ways which, to Pythagoras and Plato, would have seemed very, very strange, and even nefarious, and which cast a shadow over Newton's later years, as he saw what might come. Purcell, who is a professor of physics at Harvard, said a year or two ago, "ninety per cent of all scientists are alive;" this is a vivid reminder of the quantitative growth of scientific activity. A friend of ours, a historian, much concerned with Hellenistic and sixteenth- and seventeenth-century science, did himself a small exercise—to plot, as a function of time, the number of people engaged in the acquisition of new knowledge, which is a definition of science. It is, for about the past 200 years, an exponential function of the time, and the characteristic period is ten years. A similar plot of the publications in science follows the same law.

Now you may say that all of this is junk—that there are a few great discoveries, a few great principles, that anyone can master and understand, and that all these details are really not of any great importance in human life. Of course, many of the details are not; they are not even of importance in the life of the sciences. But, by and large, men do not devote their lives without some reason; and men will not suffer the publication of things which are trivial, derivative, or irrelevant. We make mistakes, but, by and large, the volume of publication

is a rather accurate professional judgment of what needs to be known in order to get on. And I ask you to believe me that in this growth there are insights, there are spectacles of order and harmony, of subtlety, of wonder, which are comparable to the great discoveries of which we learned in school. I ask you also to believe me that they are not easily communicated in terms of today's ordinary experience and tongue. They rest on traditions, some of which are very old, involving experience and language that has been cherished, refined, corrected, sometimes for centuries, sometimes for decades. And that is one reason why, if you were to ask me what are the fundamentals of science—"if you tell me that one clue, I will tell you the rest"—I could not respond. This is partly because sciences are ramified; they deal with different kinds of harmony, and none of them can be completely reduced to others. They are in themselves a plural and multiple reflection of reality.

But it is partly also that the principles which are general and which, from the logical point of view, imply a great deal about the natural order of the world, have had to be couched in terms which themselves have had a long human history of definition, refinement, and subtilization. If you were to ask me what is the great law of the behavior of atoms, not as we now talk about them, but as they were talked about in the early years of this century, I could certainly write it on the blackboard and it would not occupy much space; but to give some sense of what it is all about would be for me a very great chore, and for you a very earnest and unfamiliar experience.

The ramification is also a thing which is hard to appreciate outside the practitioners. We do not, in the fields of science, know each other very well. There are many crosslinkages. There are, as far as I know, no threats of contradiction. There is a pervasive relevance of everything to everything else. There are analogies, largely formal, mathematical analogies, which stretch as far as from things like language to things like heat engines. But there is no logical priority of one science over another. There is no deduction of the facts of living matter from the facts of physics. There is simply an absence of contradiction. And the criteria of order, of harmony, of generality, and of coherence, which are as much a part of science as the rectitude of observations and the correctness of logical manipulation—these criteria are *sui generis* from science to science. The world of life does not regard as simple what the physicist thinks of as simple; and the other way round. The order of simplicity, the order of nature, is different.

### ***Discourse Discouraged***

In addition to this, the sense of openness, to some extent of accident, of incompleteness, of infinity, which the study of nature brings, is of course very discouraging

to public discourse, because it is impossible to get it all, it is impossible to master it, it is impossible to summarize it, it is impossible to close it off. It is a growing thing, the ends of which are probably co-extensive with the ends of civilized human life.

This is a set of circumstances which has largely deprived our public discourse of its first requirement: a common basis of knowledge. I will not say what bad effects it may have had on philosophical discourse—that a whole category of human achievement which grew from philosophy and invention is shut off from the thoughts of the philosophers and of ordinary men. I will not say with certainty whether, in excluding this kind of order, and this kind of verifiability, one has not impoverished the discourse; I believe that one has. But in any case, it is a very hard thing, as I know from other examples, to talk about our situation and to have to say "I leave out, I leave aside, I leave as irrelevant, something which is as large, as central, as humane, and as moving a part of the human intellectual history as the development of the sciences themselves."

I believe that this is not an easy problem. I believe that it is not possible to have everyone well informed about what goes on, to have a completely common basis of knowledge. We do not have it ourselves in the sciences—far from it. I have the most agonizing troubles, and I would say on the whole fail, when I try to know what the contemporary mathematicians are doing and why. I learn with wonder, but as an outsider and an amateur, what the biochemists and the biophysicists are up to. But I have one advantage, and that is that there is a small part of one subject that I know well enough to have deep in me the sense of knowledge and of ignorance. And just this is perhaps not wholly unattainable in a much wider scale. It is perhaps not wholly out of the question to restore to all of us a good conscience about our reason, by virtue of the fact that we are in touch with some of its most difficult, brilliant, and lovely operations.

### ***The Ethical Dilemma***

As to the question of a stable, shared tradition, I have of course been talking about philosophy in a predominantly secular culture. I have not included as part of the sources of tradition a living revelation, or a living ecclesiastical authority. It is not so much that I wish to exclude it; but if our deliberations are to have general contemporary meaning, they must take into account the fact that our culture is secular and may well have to develop as a secular culture. Our tradition, strong though it is—and I think the European tradition may vie with the Chinese and the Indian in this respect—is buffeted by the eruption of change. You are all aware of how unprepared we were for the tragedies of the twentieth century when it opened, and how bitter, corrosive,

and indigestible many of them have been. I think primarily of the two world wars and the totalitarian revolutions. But take one example. We certainly live in the heritage of a Christian tradition. Many of us are believers; but none of us is immune from the injunctions, the hopes, and the order of Christianity. I find myself profoundly in anguish over the fact that no ethical discourse of any nobility or weight has been addressed to the problem of the atomic weapons. There has been much prudential discussion, much strategic discussion, and game theory. This is recent, and I welcome it, because as little as five or seven years ago, there was no discussion of any kind; that was certainly worse. But what are we to make of a civilization which has always regarded ethics as an essential part of human life, and which has always had in it an articulate, deep, fervent conviction, never perhaps held by the majority, but never absent: a dedication to "ahinsa," the Sanskrit word that means "doing no harm or hurt," which you find in Jesus—as well as, of course, the opposite—and clearly and simply in Socrates. What are we to think of such a civilization, which has not been able to talk about the prospect of killing almost everybody, except in prudential and game-theoretic terms? Of course, people do: thus Lord Russell writes, as do others; but these people want heaven and earth too. They are not in any way talking about deep ethical dilemmas, because they deny that there are such dilemmas. They say that if we behave in a nice way, we will never get into any trouble. But that, surely, is not ethics.

I, of course, am not now very deep in these things. In 1945, in 1949, and perhaps now, there have been crucial moments in which the existence of a public philosophical discourse, not aimed at the kind of proof which the mathematicians give, not aimed at the kind of verifiability which the biologists have, but aimed at the understanding of the meaning, of the intent, and of the commitment of men and at their reconciliation and analysis, could have made a great difference in the moral climate and the human scope of our times. I would go only so far; that is to say that in all those instances in which the West, notably my own country, has expressed the view that there was no harm in using the super weapons, provided only that they were used against an antagonist who had done some wrong, we have been in error; and that our lack of scruple, which grew historically out of the strategic campaigns of the Second World War, the total character of that war, and the numbing and indifference of which responsible people like Mr. Stimson complained bitterly, has been a very great disservice to the cause of freedom and of free men.

### *The Role of Certitude*

And as to the third of the pre-conditions of public discourse and of philosophy, this, I think, has to do with

an overemphasis characteristic of the Renaissance, and natural after Scholasticism, of the role of certitude. If we think of most of Plato, we can hardly imagine a more useful exploration of the central ideas of high Athenian culture. Plato does not end his discussions with any summary; in that respect, they may be a model for ours. And the purpose is not the attainment of certainty, the purpose is the exploration of meaning. The purpose is the exploration of what men wish, intend, hope, cherish, love, and are prepared to do. My belief is that if the common discourse can be enriched by a more tolerant and humane welcome for the growth of science, its knowledge, its intellectual virtue—I am not now speaking of machinery, for this is another problem—it may be more easily possible to accept the role of clarification and of commitment which is the true purpose of philosophy, and not to hang around its neck that dread, dead bird, "How can you be sure?" which has, I believe, stunted philosophy, even in its great modern days, and which has driven it actually almost out of existence at the present moment.

I would think that we could look to a future in which, very high on the list of the purposes of consumption and leisure, was knowledge and thought, a future in which the intellectual vigor of man had a greater scope than at any time in history, and in which, to quote what Mr. Eugene Rostow said, man is free to love, to live, and to know. It is, I think, no accident that the optimistic view of the present, and especially of the American present, came from Rostow. For in the Common Law, in our country at least, you see that the common basis of knowledge, the stable shared tradition, and the recognition of the importance of non-propositional knowledge, are all highly characteristic hallmarks of this successful community. I believe that it is largely, of course not wholly, through living, which is so deeply the function of the arts, and through knowing, which is largely the function of the sciences, that the function of the philosopher, which is loving, can be most richly supported.

I know that, technically, the questions I have raised are formidable in a most discouraging way: how are we to learn a little more of what goes on in this world, and to be satisfied with understanding, in places where certitude is unattainable? I think we may regard the exploration of these questions as quite beyond the scope of our discussions here. I am not very wise about them; but I am deeply sure of one thing, and that is that they require effort and discipline and dedication, and that, in the measure in which we come to understand the reasons for this, we may also find ways of doing it. I find it hard to believe that with the greatest intellectual activity of all time taking place in the next room, catholic, public, common understanding will be possible unless we open the doors.